

Amendments to the Claims

Please amend the claims to read as follows.

1. (Currently Amended): A method for manufacturing an optical device comprising:
moving a mask situated between a layer of optical waveguide material to be shaped and a source of etchant ions, wherein at least two areas of the optical waveguide material are exposed to variable amounts of etchant ions provided along a selected etching direction to provide an optical waveguide having an optical axis non-parallel to the selected etching direction and having a thickness that varies along the direction of the optical axis, thereby causing vertical thickness variations between the at least two areas.
2. (Original): The method of claim 1, wherein the mask has a comb shape comprising teeth.
3. (Original): The method of claim 1, wherein the mask has a comb shape and wherein the mask comprises tapered teeth.
4. (Original): The method of claim 1, wherein the mask comprises at least one slit.
5. (Original): The method of claim 1, further comprising a stationary mask.
6. (Original): A vertically tapered waveguide produced by the method of claim 1.
7. (Original): A diffraction grating produced by the method of claim 1.
8. (Original): The method of claim 1, wherein the mask moves in a linear direction with respect to the plane of the optical waveguide direction.
9. (Original): The method of claim 1, wherein the mask moves with a reciprocating motion with respect to the plane of the optical waveguide direction.

17. (Original): The method of claim 14 wherein the mask is in contact with the waveguide.
18. (Original): The method of claim 14 wherein the mask is up to 250 microns above the waveguide.
19. (Original): The method of claim 14 wherein the mask is moved a distance of 50-1000 microns.
20. (Original): The method of claim 14 wherein the depth of the taper is in the range of 0-5 microns.
21. (Original): A vertically tapered waveguide made according to the method of claim 14.
22. (Previously Presented): An optical device comprising:
a waveguide comprising an upper surface and a lower surface, the upper surface comprising a taper surface that provides a vertical taper to the waveguide; and
a diffraction grating disposed on the taper surface, wherein the waveguide and the diffraction grating are made from a monolithic optical material, and wherein the monolithic optical material is over a substrate common to both the waveguide and the diffraction grating, the substrate disposed adjacent to the lower surface of the waveguide.